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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/642,632	08/19/2003	Akira Tanaka	500.43031X00	3748

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EXAMINER

KALAFUT, STEPHEN J

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 04/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/642,632

Applicant(s)

TANAKA, AKIRA

Examiner

Stephen J. Kalafut

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5,8-11 and 14-18 is/are rejected.
- 7) ☒ Claim(s) 3,4,6,7,12 and 13 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date (2 dates).

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 8-10, 14, 17 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Dristy *et al.* (US 6,926,988).

Dristy *et al.* disclose a fuel cell (50) for generating electricity, which comprises two electrodes (52, 53) on either side of a membrane (51) that would generate an electric field from the reaction of hydrogen and oxygen, two contact members (56, 60) that each contact a side surface of an electrode, and a pressing member (64) for urging the membrane, electrodes and contact members toward each other. The two contact members are isolated from each other, as seen in figure 3, and being conductive (column 6, lines 8-9), would form an electric circuit with the electrodes of the fuel cell. The pressing member (64) has a surface in contact with a contact member (60), which would be the “head surface” in claim 14. Regarding claim 17, the two contact members would be connected to each other through support portions (57, 67) at their outer periphery, and are urged toward each other within the outer periphery. Regarding claim 18, each of the contact members (56, 60) would be a “side member”, while the pressing member (64) and the support members (57, 67) would be clamping members.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dristy *et al.* in view of Barton *et al.* (US 5,686,200).

Dristy *et al.* do not disclose methanol as a liquid fuel, nor a recess within at least one of the contact members that receives the membrane-electrode assembly. Barton *et al.* disclose a polymer electrolyte fuel cell (10) that is held together by clamping members (66), which uses hydrogen as a fuel, but may also use methanol (column 8, lines 39-43). This teaching, along with the teaching of Dristy *et al.* to use their assembly with water, a liquid reactant (column 4, lines 7-20), when operated as an electrolysis cell, would indicate that liquid as well as gaseous reactants are useful in clamped cells with a polymer electrolyte. For this reason, it would be obvious to use methanol as a reactant, as taught by Barton *et al.* in the fuel cell of Dristy *et al.* Regarding claim 11, Barton *et al.* also discloses contact members (242, 252) that include recesses for receiving the membrane-electrode assembly (120). Because of the mechanical stability afforded by this structure, it would be obvious to make a recess as shown by Barton *et al.* in the contact members of Dristy *et al.*

Claims 5 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dristy *et al.* in view of Grot (US 6,428,921).

These claims differ from Dristy *et al.* by reciting that the pressing member is a screw, or that at least one of the contact members is bent by the pressing force, so that it undergoes tension on one side and compression on the other. Grot discloses a pressing member for fuel cells, comprising a set of screws (30). Where each screw contacts a planar member (28), there would be some degree of bending, in which the side of the planar member adjacent the screw would undergo compression while the other side would undergo tension. Because the set of screws would assure a uniform distribution of the pressure on the fuel cell, and are adjustable (column 2, lines 58-61), it would be obvious to use the screws of Grot with the fuel cell of Dristy *et al.*

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dristy *et al.* in view of Strasser (US 4,317,864).

This claim differs from Dristy *et al.* by reciting at least one of the contact members having a convexly curved surface. Strasser discloses contact members (10) for a fuel cell, which are corrugated, and thus include convexly curved surfaces. This would provide gas passageways, as well as a passage for pressing medium (column 4, lines 47-55), it would be obvious to use the corrugated contact members of Strasser in the fuel cell of Dristy *et al.*

Claims 3, 4, 6, 7, 12 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art cited herein or by applicants does not disclose a fuel cell with a pressing member and electrode contact members, which contact members are mechanically connected via their side surfaces, the pressing member arranged

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between the mutual contact area of the contact members and the two side surfaces in a direction perpendicular to the pressing direction, where the contact area is other than the side surfaces of the fuel cell.

The disclosure is objected to because of the following informalities: The detailed description section of the specification does not mention figure 7. The numeral 7 does not appear in figure 2, as stated on page 15. The numerals 9, 11 and 13, in figures 3 or 7, are not found in the specification. Appropriate correction is required.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Zaima *et al.* (US 4,973,531), Schora (US 5,185,220), Bisaka *et al.* (US 6,645,659) and Gaines *et al.* (US 7,005,209) disclose fuel cells with various pressing members.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen J. Kalafut whose telephone number is 571-272-1286. The examiner can normally be reached on Mon-Fri 8:00 am-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

sjk

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STANDARD EXAMINER
GROUP

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